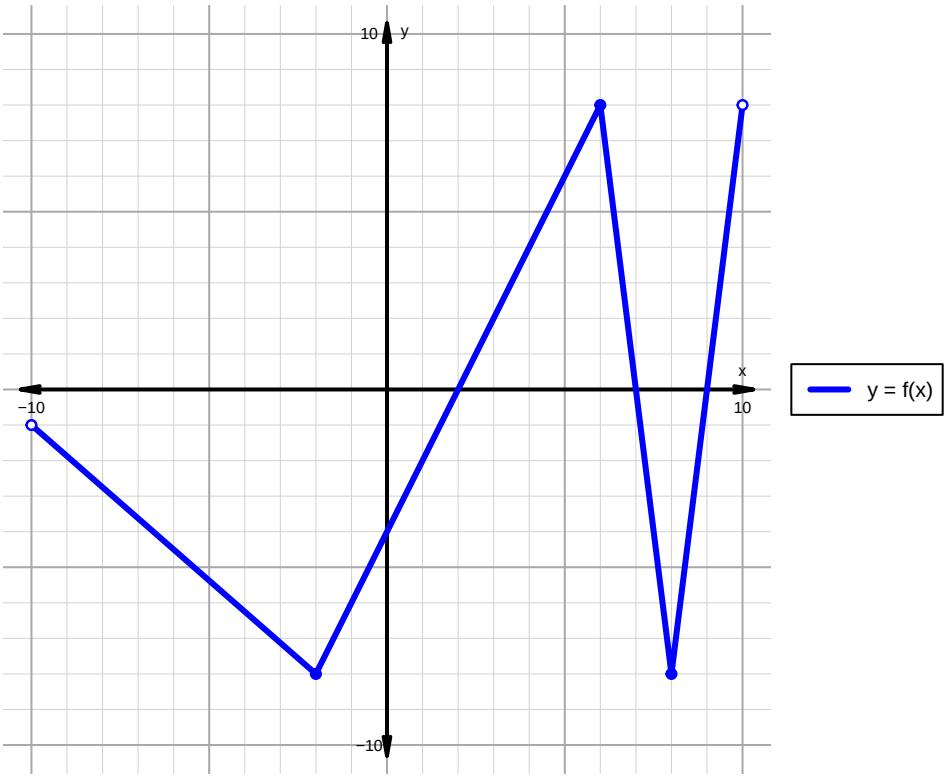
Name: Date:

Intervals, Transformations, and Slope Solution (version 144)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(2, 7) \cup (9, 10)$
Negative	$(-10, 2) \cup (7, 9)$
Increasing	$(-2, 6) \cup (8, 10)$
Decreasing	$(-10, -2) \cup (6, 8)$
Domain	$(-10, 10)$
Range	$(-8, 8)$

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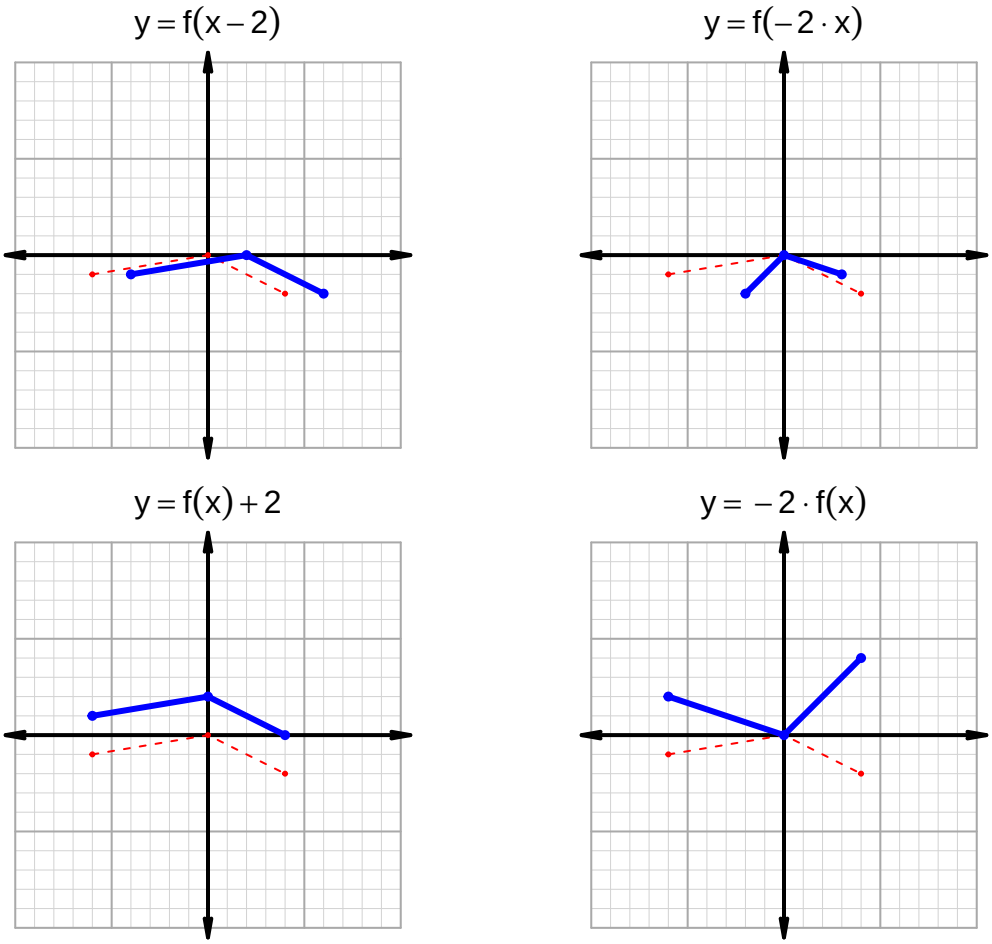
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 81$ and $x_2 = 90$. Express your answer as a reduced fraction.

x	$g(x)$
12	81
33	90
81	33
90	12

$\frac{f(90)-f(81)}{90-81} = \frac{12-33}{90-81} = \frac{-21}{9}$

The greatest common factor of -21 and 9 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-7}{3}$$